IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Kenji Yamagami

Application No.: 10/627,507

Filed: July 25, 2003

For: Method and Apparatus for
Synchronizing Applications for Data
Recovery Using Storage Based Journaling

Customer No.: 20350

Confirmation No. 3250

Examiner: Meng Ai T An

Technology Center/Art Unit: 2126

PETITION TO MAKE SPECIAL FOR
NEW APPLICATION PURSUANT TO
37 C.F.R. § 1.102(d) &
M.P.E.P. § 708.02, Item VIII,
ACCELERATED EXAMINATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a petition to make special the above-identified application in accordance with MPEP § 708.02, Item VIII, accelerated examination. The application has not received any examination by the Examiner.

(A)   The Commissioner is authorized to charge the petition fee of $130 under 37 C.F.R. § 1.17(h), and any additional fees that may be associated with this petition may be charged to Deposit Account No. 20-1430.

(B)   All the claims are believed to be directed to a single invention. If the examiner determines that all the claims presented are not obviously directed to a single invention, then Applicant will make an election without traverse as a prerequisite to the grant of special status where the specific grouping of claims will be determined by the examiner.

09/07/2(

      (C)   A pre-examination search was performed by an independent patent search firm. The pre-examination search includes a classification search, a computer database search, and a keyword search. The classification search covered the following classes and sub-classes:

711/ 159, 162
714/ 2, 6, 7, 20
719/ 328

Additionally, a computer database search was conducted on the USPTO systems EAST and WEST. The following references were identified in the search report:

U.S. Patent Nos.:

6,301,677	Squibb
6,714,951	Bills et al.
6,732,125	Autrey et al.
6,915,315	Autrey et al.

      (D)   The above references are enclosed herewith, collectively as Exhibit A.

      (E)   Set forth below is a detailed discussion of the references, pointing out with particularity how the claimed subject matter recited in the claims, amended according to the preliminary amendment filed herewith, is distinguishable over the references.

Claimed Subject Matter of the Present Invention

There are six independent claims among the thirty pending claims.

Independent claim 1 recites a method for accessing data contained in a data store comprising communicating a request to the data store to perform a user-requested operation on an object stored in a data store, and communicating a marker request to the data store where the marker request includes information indicative of the operation and the object, wherein the marker request produces a marker journal entry. A request to the data store is communicated to retrieve a user-specified marker journal entry. A user-request to perform a recovery operation is detected and in response thereto a recovery request is communicated to the data store to restore a data state of the data store, the user-request including information including a target time of the data state, the target time being based on a time associated with a previously retrieved marker journal entry.

Independent claim 6 recites a method for processing data on a data store comprising monitoring user-requests for operations to be performed on the data store. If a user-request is a predetermined operation, then a marker journal request is communicated to the data store, thereby creating a marker journal entry to mark a time of occurrence of the predetermined operation. The marker journal request includes information representative of the predetermined operation.

Independent claim 11 recites a method for processing data contained in a data store comprising receiving user-requests for operations to be performed on the data store, and for each user-request, communicating or more associated requests to the data store where for at least some of the user-requests, a marker journal request is also communicated to the data store, thereby creating one or more marker journal entries to mark a time of occurrence of some of the user-requests. Claim 11 further recites retrieving one or more first marker journal entries from the data store based on one or more retrieval criteria, and displaying the first marker journal entries. A recovery operation is performed based on a target time associated with a user-selected one of the first marker journal entries.

Independent claim 17 recites a method for processing data in a data store comprising producing one or more snapshots of a data store, producing journal entries corresponding to write requests directed to the data store, and producing marker journal entries where the journal entries and the marker journal entries are ordered according to the time of their respective write requests and marker requests. Claim 17 further recites detecting a request to retrieve a specified marker journal entry and accessing the specified marker journal entry. Claim 17 recites detecting a request to perform a recovery operation based on a time associated with a previously retrieved marker journal entry.

Independent claim 20 recites a computer apparatus comprising computer program code configured to communicate marker journal requests to a data store to create a plurality of marker journals. The program code is further configured to communicate marker retrieval requests to the data store to retrieve one or more of the marker journal entries and to communicate a data recovery request to the data store to perform a recovery operation to recover a data state in the data store.

Independent claim 25 recites a computer program product comprising computer program code to communicate a maker journal request to a data store to create a marker journal entry, to communicate a marker retrieval request to the data store to retrieve at least one marker journal entry, and to communicate a recovery request to the data store to recover a data state of the data store.

U.S. Patent No. 6,301,677 Squibb

The patent to Squibb (6,301,677), assigned to Delta-Tek Research, Inc., provides for a System and Apparatus for Merging a Write Event Journal and an Original Storage to Produce an Updated Storage Using an Event Map. Squibb describes various aspects of a method of creating an event map from an event journal wherein current event markers for a plurality of write event entries are generated (see column 7, line 40 to column 8, line 57). Squibb describes how the event map can be edited (see column 9, lines 2-51). Squibb disclose various ways that an even map can be used (see column 9, line 52 and following).

As to **claim 1**, the reference does not show or suggest accessing data contained in a data store that includes a step of communicating a marker request to the data store where the marker request includes information indicative of the operation and the object, wherein the marker request produces a marker journal entry. The reference does not describe or suggest communicating a request to the data store to retrieve a user-specified marker journal entry, or detecting a user-request to perform a recovery operation and then communicating a recovery request to the data store to restore a data state of the data store. The reference does not show or suggest a user-request that includes a target time of the data state where the target time being based on a time associated with a previously retrieved marker journal entry.

As to **claim 6**, the reference does not disclose or suggest a method for processing data on a data store comprising monitoring user-requests for operations to be performed on the data store. The reference does not disclose or suggest that if a user-request is a predetermined operation, then a marker journal request is communicated to the data store, thereby creating a marker journal entry to mark a time of occurrence of the predetermined operation, where the marker journal request includes information representative of the predetermined operation.

As to **claim 11**, the reference does not disclose or suggest a method for processing data contained in a data store that includes communicating a marker journal request to the data store for at least some of the user-requests for operations on the data store. The reference does not disclose or suggest that marker journal entries are created in response to the marker journal requests. The reference does not describe or suggest retrieving one or more first marker journal entries from the data store based on one or more retrieval criteria, and displaying the first marker journal entries, or that a recovery operation is performed based on a target time associated with a user-selected one of the first marker journal entries.

As to **claim 17**, the reference does not disclose or suggest a method for processing data in a data store comprising steps of producing one or more snapshots of a data store, producing journal entries corresponding to write requests directed to the data store, and producing marker journal entries where the journal entries and the marker journal entries are ordered according to the time of their respective write requests and marker requests. The reference does not describe or suggest detecting a request to retrieve a specified marker journal entry and accessing the specified marker journal entry, or detecting a request to perform a recovery operation based on a time associated with a previously retrieved marker journal entry.

As to **claim 20**, the reference does not disclose or suggest a computer apparatus comprising computer program code configured to communicate marker journal requests to a data store to create a plurality of marker journals. The reference does not disclose computer program code that is further configured to communicate marker retrieval requests to the data store to retrieve one or more of the marker journal entries and to communicate a data recovery request to the data store to perform a recovery operation to recover a data state in the data store.

As to **claim 25**, the reference does not disclose or suggest a computer program product comprising computer program code to communicate a maker journal request to a data store to create a marker journal entry, to communicate a marker retrieval request to the data store to retrieve at least one marker journal entry, and to communicate a recovery request to the data store to recover a data state of the data store.

Appl. No. 10/627,507
Petition to Make Special dated August 31, 2005

PATENT

U.S. Patent No. 6,714,951 Bills et al.

The patent to Bills et al. (6,714,951), assigned to International Business Machines Corporation, provides for a Continuous Journaling of Objects Within a Hierarchical Directory Tree. Bills et al. disclose automated processing for continuous journaling of object. (see column 2, line 53 to column 3, line 37). A journal log 60 part of JFS (journal file system) 56 is provided that comprises a plurality of journal records 61. Each record includes object type, object name, journaling attribute and timestamp fields. Journaling attribute filed indicates whether a journal record should be journaled upon occurrence of an event affecting the object (see column 6, lines 40-67).

As to **claim 1,** the reference does not show or suggest accessing data contained in a data store that includes a step of communicating a marker request to the data store where the marker request includes information indicative of the operation and the object, wherein the marker request produces a marker journal entry. The reference does not describe or suggest communicating a request to the data store to retrieve a user-specified marker journal entry, or detecting a user-request to perform a recovery operation and then communicating a recovery request to the data store to restore a data state of the data store. The reference does not show or suggest a user-request that includes a target time of the data state where the target time being based on a time associated with a previously retrieved marker journal entry.

As to **claim 6,** the reference does not disclose or suggest a method for processing data on a data store comprising monitoring user-requests for operations to be performed on the data store. The reference does not disclose or suggest that if a user-request is a predetermined operation, then a marker journal request is communicated to the data store, thereby creating a marker journal entry to mark a time of occurrence of the predetermined operation, where the marker journal request includes information representative of the predetermined operation.

As to **claim 11,** the reference does not disclose or suggest a method for processing data contained in a data store that includes communicating a marker journal request to the data store for at least some of the user-requests for operations on the data store. The reference does not disclose or suggest that marker journal entries are created in response to the marker journal requests. The reference does not describe or suggest retrieving one or more first marker journal

entries from the data store based on one or more retrieval criteria, and displaying the first marker journal entries, or that a recovery operation is performed based on a target time associated with a user-selected one of the first marker journal entries.

As to **claim 17**, the reference does not disclose or suggest a method for processing data in a data store comprising steps of producing one or more snapshots of a data store, producing journal entries corresponding to write requests directed to the data store, and producing marker journal entries where the journal entries and the marker journal entries are ordered according to the time of their respective write requests and marker requests. The reference does not describe or suggest detecting a request to retrieve a specified marker journal entry and accessing the specified marker journal entry, or detecting a request to perform a recovery operation based on a time associated with a previously retrieved marker journal entry.

As to **claim 20**, the reference does not disclose or suggest a computer apparatus comprising computer program code configured to communicate marker journal requests to a data store to create a plurality of marker journals. The reference does not disclose computer program code that is further configured to communicate marker retrieval requests to the data store to retrieve one or more of the marker journal entries and to communicate a data recovery request to the data store to perform a recovery operation to recover a data state in the data store.

As to **claim 25**, the reference does not disclose or suggest a computer program product comprising computer program code to communicate a maker journal request to a data store to create a marker journal entry, to communicate a marker retrieval request to the data store to retrieve at least one marker journal entry, and to communicate a recovery request to the data store to recover a data state of the data store.

U.S. Patent No. 6,732,125 Autrey et al.
U.S. Patent No. 6,915,315 Autrey et al.

The patent to Autrey et al. (6,732,125), assigned to Storage Technology Corporation, provides for a Self Archiving Log Structures Volume with Intrinsic Data Protection. A self archiving log structured volume has a record of every write transaction and record of every synch event so that the volume can be reconstructed at any point in time. A

synch point as close as possible to the desired time is located and the log is scanned backward for the reconstruction length to build the index which services the subsequent read requests on recovery volume (see column 2, lines 22-27; column 4, lines 60-65; and column 5, lines 45-51). U.S. patent 6,915,315 is a continuation of U.S. patent 6,732,125.

As to **claim 1**, the reference does not show or suggest accessing data contained in a data store that includes a step of communicating a marker request to the data store where the marker request includes information indicative of the operation and the object, wherein the marker request produces a marker journal entry. The reference does not describe or suggest communicating a request to the data store to retrieve a user-specified marker journal entry, or detecting a user-request to perform a recovery operation and then communicating a recovery request to the data store to restore a data state of the data store. The reference does not show or suggest a user-request that includes a target time of the data state where the target time being based on a time associated with a previously retrieved marker journal entry.

As to **claim 6**, the reference does not disclose or suggest a method for processing data on a data store comprising monitoring user-requests for operations to be performed on the data store. The reference does not disclose or suggest that if a user-request is a predetermined operation, then a marker journal request is communicated to the data store, thereby creating a marker journal entry to mark a time of occurrence of the predetermined operation, where the marker journal request includes information representative of the predetermined operation.

As to **claim 11**, the reference does not disclose or suggest a method for processing data contained in a data store that includes communicating a marker journal request to the data store for at least some of the user-requests for operations on the data store. The reference does not disclose or suggest that marker journal entries are created in response to the marker journal requests. The reference does not describe or suggest retrieving one or more first marker journal entries from the data store based on one or more retrieval criteria, and displaying the first marker journal entries, or that a recovery operation is performed based on a target time associated with a user-selected one of the first marker journal entries.

As to **claim 17**, the reference does not disclose or suggest a method for processing data in a data store comprising steps of producing one or more snapshots of a data store,

producing journal entries corresponding to write requests directed to the data store, and producing marker journal entries where the journal entries and the marker journal entries are ordered according to the time of their respective write requests and marker requests. The reference does not describe or suggest detecting a request to retrieve a specified marker journal entry and accessing the specified marker journal entry, or detecting a request to perform a recovery operation based on a time associated with a previously retrieved marker journal entry.

As to **claim 20**, the reference does not disclose or suggest a computer apparatus comprising computer program code configured to communicate marker journal requests to a data store to create a plurality of marker journals. The reference does not disclose computer program code that is further configured to communicate marker retrieval requests to the data store to retrieve one or more of the marker journal entries and to communicate a data recovery request to the data store to perform a recovery operation to recover a data state in the data store.

As to **claim 25**, the reference does not disclose or suggest a computer program product comprising computer program code to communicate a maker journal request to a data store to create a marker journal entry, to communicate a marker retrieval request to the data store to retrieve at least one marker journal entry, and to communicate a recovery request to the data store to recover a data state of the data store.

Conclusion

In view of this comments presented in the instant petition and the claim amendments presented in the accompanying preliminary amendment, the Examiner is respectfully requested to issue a first Office Action at an early date.

Respectfully submitted,

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Attachments
- Exhibit A w/ 4 references

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APPENDIX A

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